THE TURKEY BUSINESS in California

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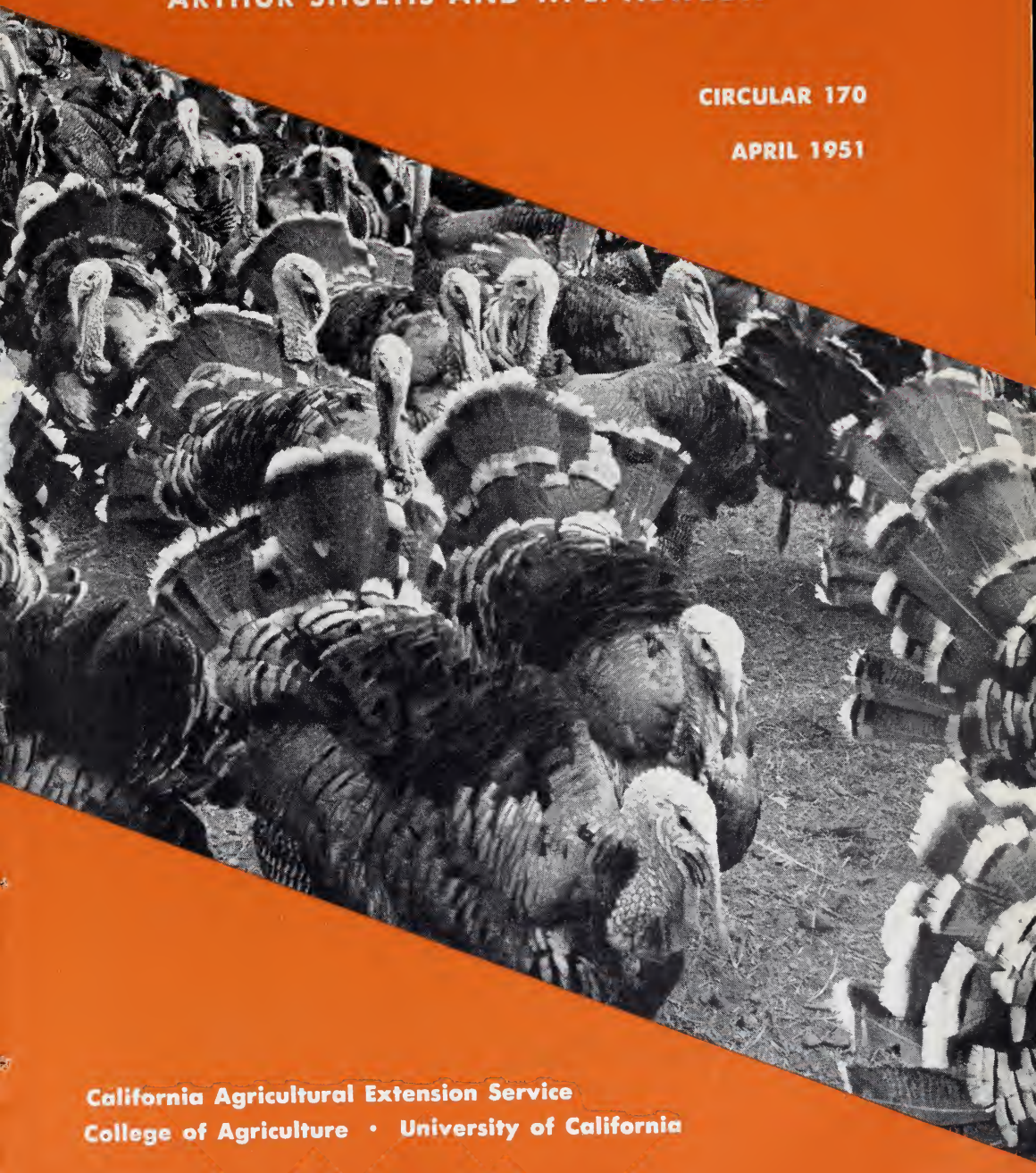

California Agricultural Extension Service
College of Agriculture • University of California

Thinking of raising turkeys?

This circular points out the factors that should be considered before going into the turkey-raising business in California. It covers information relative to raising meat birds, and the production of hatching-eggs. It does not give detailed information on the actual operations involved in raising the birds.

California turkey growers are favored by the climate, but penalized by price margins arising from being in an area deficit in feeds and surplus in turkeys. With a larger local demand for turkey meat, some of their problems would disappear.

During recent years, California has led the country in turkey production and there is evidence to show that the turkey business in the state will remain profitable for some years.

However, before rushing into the turkey business, the prospective grower would do well to consider these factors:

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The Turkey Business in California

Arthur Shultis • W. E. Newlon

Turkey raising is a specialized business

TURKEY PRODUCTION in California is an intensive, specialized, commercial business. A large number of birds are raised in a small area and fed purchased feed. The proportion of cash costs to income is high, and the profit margin is small. Many people enter the business each year and some fail, but others continue and make a living over the years. Efficiency of production must be high to make a satisfactory income. Some years are much better than others, as determined by the price of turkeys and costs of feed.

The profits will vary from one year to another

Profit varies considerably from year to year and from farm to farm. There are two main types of influences—those from off the farm and those that affect the efficiency and economy of production on the particular farm and are somewhat under the control of the individual producer. A grower's decisions in choice of stock, disease control, buying of feed, and marketing his turkeys may result in a good profit or a considerable loss under the prevailing price and cost conditions. Turkey prices as determined by total production—Supply—and consumer ability and desire to buy—Demand—are largely beyond the control of the grower but vary considerably from year to year, as shown in table 1, and greatly affect his returns. The price of feed, which makes up about 70 per cent of the total cost, is also an important profit factor beyond the control of the grower except through his selection and purchases.

Table 1 also shows the turkey-feed ratio for the last 10 years. This figure is

TABLE 1. Turkeys Raised, Prices, Consumption, and Cost Ratios

	Turkeys raised		California cash receipts from turkeys	Farm price per pound		U. S. per capita consumption*	Turkey-feed ratio	
	United States	California		United States	California		United States	California
	thousands	thousands	$1,000	cents	cents	pounds	pounds	pounds
1940	34,047	3,359	8,826	15.4	14.1	3.5	8.4	....
1941	32,902	3,527	12,231	19.9	20.9	3.5	9.2	8.6
1942	32,805	3,280	19,430	27.5	30.0	3.7	9.8	10.2
1943	32,309	4,002	22,272	32.6	33.5	3.3	11.1	11.7
1944	35,616	4,762	29,201	34.0	33.7	3.3	10.8	10.3
1945	44,221	5,762	35,918	33.6	32.9	4.3	11.5	10.8
1946	40,724	4,610	35,221	36.2	33.8	4.5	9.7	8.6
1947	34,970	4,057	29,618	36.4	34.2	4.5	7.7	6.7
1948	31,788	4,706	41,367	46.7	46.7	3.6	9.8	9.2
1949	41,965	6,824	46,227	35.1	33.3	4.1	11.0	9.0

*Does not allow for exports. Beginning in 1941 consumption figures apply only to civilian population.
Source of data: California Crop and Livestock Reporting Service. California Annual Poultry Hatchery Report for 1949.

arrived at by dividing the farm price per pound of turkey, by the price per pound of feed. For instance, if the farm price for turkeys was 30.6 cents, and the cost of feed was 4.08 cents, then the turkey-feed ratio would be 7.5—a pound of turkey paid for 7.5 pounds of feed.

The higher this figure is, the greater is the opportunity for profit, since it takes only about 5 pounds of feed to produce a pound of turkey.

Here is a roundup of the California situation

California turkey growers have a natural production advantage in the state's climate—mild winters and a dry summer. In recent years it has become the leading turkey-producing state in the country.

This natural advantage, however, is partially offset by certain transportation margins. Because the high production of turkey meat has outstripped the state's consumption (in spite of a huge population growth) some of the birds must be shipped out to distant markets. California also uses more grain and feed ingredients than are produced in the state, so part of the feed must be shipped in, and is higher in price than in many other states.

In table 1 it will be noted that the turkey-feed ratio for California has been less favorable than that for the entire country in 7 of the last 9 years. However, good marketing and feed-supplying agencies, high efficiency of production, and a growing local market should permit a large and fairly profitable turkey business to continue in California.

Consider the immediate outlook each year

The price of turkeys at marketing time cannot be forecast accurately when planning operations for the season ahead. There are, however, some indications as to whether the price may be higher or lower than the preceding year. Each fall the Bureau of Agricultural Economics of the United States Department of Agriculture issues outlook information and forecasts which may be helpful in planning for the next year. If it looks as if consumer purchasing power may be higher and turkey production lower, then higher prices may be expected and it might be a good year to go into the turkey business.

The turkey grower already in the business will probably make a little more or lose less by operating to capacity every year rather than trying to hit the good years and not raise turkeys in the poor ones.

Anyone contemplating going into the business should consider carefully the immediate future. If the outlook is good, it should be easier to succeed; if the outlook is poor, additional finances and effort will be required. As this is written in December, 1950, the outlook for 1951 is good. Consumer purchasing power will be high and prices of everything are trending upward. Also, the last two years, 1949 and 1950, were years of heavy turkey production and low turkey prices. Many turkey growers will have lost so heavily they will not be in a position to continue, and with high employment there won't be so many enthusiastic beginners entering the business.

By the time this circular reaches many of the readers, the above forecast of a better year for turkey growers in 1951 will be shown to be right or wrong. It is included simply to illustrate the possibility of using outlook information in turkey operations. If the outlook is good, the reader may go ahead in confidence; if it is poor, he should be very cautious and practice stringent economy in capital outlay, in production expenditures, and in personal living. The latest outlook information from federal and state agencies may be obtained or consulted at any of the local Agricultural Extension Service (Farm Advisor) offices. These are located in nearly all counties in the state.

There are many risks to be considered

The raising of turkeys is not only uncertain as to price but it is subject to disease and death losses when improperly handled. Poults are expensive and may die from a number of causes at various ages before reaching market age. To succeed the grower must get pullorum-free

TABLE 2. Meat-Turkey Study Record Averages

	Stanislaus County 1940–1942	Fresno and Tulare counties		
		1947	1948	1949
Number of records	14	22	22	20
Average number raised per record	3,433	4,610	5,494	6,656
Per cent of poults raised	77	86	83	85
Average weight per bird raised	18.9	19.6	19.3	20.0
Hours of labor per bird raised	.60	.47	.52	.51
Value or cost of labor per hour	$ .40	$ .86	$ .86	$ .87
Pounds of mash per pound produced	2.9	3.0	3.0	3.1
Pounds of grain per pound produced	2.1	2.0	2.0	1.9
Total pounds per pound produced	5.0	5.0	5.0	5.0
Average price per cwt. mash and grain	$ 1.96	$ 4.49	$ 4.45	$ 4.08
Cost and income per bird raised:				
Feed cost	$ 1.90	$ 4.52	$ 4.43	$ 4.17
Poult cost	.48	.67	.85	.90
Hired and operator's labor	.25	.41	.45	.44
Miscellaneous, fuel, etc.	.09	.21	.21	.22
Depreciation on facilities	.04	.08	.09	.12
Interest on investment at 5%	.06	.09	.11	.12
Total cost	$ 2.82	$ 5.98	$ 6.14	$ 5.97
Less miscellaneous income, manure, and sacks	.03	.12	.10	.06
Net cost	$ 2.79	$ 5.86	$ 6.04	$ 5.91
Average value	$ 4.29	$ 7.09	$ 9.23	$ 6.14
Management income	$ 1.50	$ 1.23	$ 3.19	$ .23
Farm income per bird raised*	1.68	1.53	3.48	.51
Average price per pound	22.7c	36.1c	47.8c	30.6c
Net cost per pound	14.8	29.8	31.3	29.5
Management income per pound	7.9	6.3	16.5	1.1
Farm income per pound*	8.9	7.9	18.0	2.5

* Farm income is the amount by which income exceeds cash costs and depreciation. It is the total amount received by the producer for his management, labor, and invested capital.

poults from good breeders, brood and raise them away from chickens and other disease exposure, and feed and handle them well. Free bulletins and advice that should be helpful are available from the College of Agriculture of the University of California, or through local Agricultural Extension Service offices.

Meat production. Most turkey raisers are commercial meat-bird producers only. They buy baby poults from a hatchery and raise them to market age over a period of six to nine months. Since poults are obtainable only during a few months in the spring, this business is not a year-around enterprise. After marketing, there will be a few months in which to prepare for the next year's poults and possibly take a vacation. Table 2 shows costs, returns, and earnings in turkey meat production, as compiled by the Agricultural Extension Service in conducting turkey management studies in the San Joaquin Valley area.

Hatching-egg production. Another important type of turkey business is the production of hatching-eggs. This enterprise begins in the fall with the selection of suitable breeding hens and toms from among the birds raised. Hatching-egg production begins in the winter or early spring in California and is usually continued on into late spring, as long as there is a demand for the eggs at profitable prices. At the end of the breeding season (usually in April or May) the breeding birds are sold for meat. This enterprise is usually combined with growing birds for meat, so the combination furnishes year-around use of labor and equipment.

The hatching-egg producer finds it more profitable to produce eggs over a long period and in excess of the number needed for his own poults and, therefore, needs a good market for most of his eggs. The combination of hatching-eggs and the raising of meat birds is a farm business requiring more experience and attention to detail than the strictly meat enterprise.

A profit from hatching-egg enterprises requires the production and sale of a large number of eggs per hen, which in turn requires good stock and good management as well as a long marketing period. Table 3 shows average inputs, costs, and returns for hatching-egg production in San Diego County for the nine years, 1938 to 1946.

Hatching, breeding. The hatching of turkey eggs is another specialized business requiring special knowledge and facilities. The hatcheryman is an important link between egg producers and turkey raisers. To be successful he must have a considerable volume of business over a fairly long hatching season, and must also offer poults of satisfactory breeding and livability. There are about 140 turkey hatcheries in California and about 10 per cent of the poults hatched are shipped out of the state.

The turkey breeder is at the top of the turkey profession in that he applies the science of genetics to his work and furnishes the superior breeding stock essential to an efficient industry.

Although some turkeys are raised in almost every county in California, commercial production is concentrated in the warmer, dryer regions—the San Joaquin and Sacramento valleys and adjoining foothill areas, and some parts of southern California. A warm, dry climate with few late spring rains or early fall storms is preferable. Isolation from other poultry and turkey farms is important to avoid disease. Nearness to economical sources of feed and established marketing agencies is advantageous. Areas in California with a considerable turkey concentration are well served by private and cooperative agencies supplying feed and marketing turkeys.

For hatching-egg production it is important to be in an area where assistance in selecting and blood-testing the breeding birds is available and with well established market outlets for the eggs. The San Joaquin Valley is the most important

TABLE 3. San Diego County Turkey Egg Study Record Averages 1938–1946

	1938	1939	1940	1941	1942	1943	1944	1945	1946	9-Year average
Number of records	11	14	7	5	9	10	15	11	9	10
Total number of hens	3572	5337	2591	2061	2853	4835	5825	4256	5376	4078
Average number days of record	168	189	202	214	161	195	184	195	167	186
Total eggs laid per hen	50	57	54	73	58	64	70	71	48	61
Hatching eggs sold per hen	45	51	43	65	51	57	60	63	42	53
Average price per hatching egg	13.9c	13.9c	11.2c	11.4c	16.4c	21.4c	26.6c	28.3c	20.8c	18.6c
Net cost per hatching egg	10.6	8.8	10.0	6.6	10.5	10.9	12.9	13.7	19.8	11.3
Management income per hatching egg	3.3	5.1	1.2	4.8	5.9	10.5	13.7	14.6	1.0	7.3
Cost of mash and grain per cwt.	$ 2.18	$ 2.01	$ 2.36	$ 2.14	$ 2.88	$ 2.86	$ 3.04	$ 3.16	$ 3.39	$ 2.67
Pounds of mash and grain per hen day	.61	.52	.56	.53	.63	.58	.60	.59	.61	.58
Hours of labor per hen	2.2	2.0	2.0	2.0	2.3	2.1	2.4	3.2	1.8	2.2
Value per hour of labor	$ 0.30	$ 0.31	$ 0.32	$ 0.43	$ 0.36	$ 0.62	$ 0.72	$ 0.77	$ 0.80	$ 0.51
Feed cost per hen	$ 2.55	$ 2.16	$ 2.83	$ 2.75	$ 3.21	$ 3.56	$ 3.64	$ 3.95	$ 3.66	$ 3.15
Hired labor cost	.09	.18	.20	. 10	.28	.31	.07	.53	.30	.23
Value operator's labor	.57	.43	.43	.75	.58	1.00	1.66	1.95	1.26	.96
Miscellaneous expense	.32	.30	.24	.39	.35	.43	.50	.57	.42	.39
Depreciation	.12	.10	.13	.12	.13	.13	.20	.23	.21	.15
Interest on investment at 5%	.16	.12	.12	.11	.19	.22	.27	.28	.27	.19
Net stock cost*	1.03	1.27	.61	.26	.80	.87	1.75	1.54	2.39	1.17
Total cost per hen	$ 4.84	$ 4.56	$ 4.56	$ 4.48	$ 5.54	$ 6.52	$ 8.09	$ 9.05	$ 8.51	$ 6.24
Less income not hatching eggs	.08	.12	.23	.20	.25	.29	.34	.37	.25	.24
Net cost hatching eggs per hen	$ 4.76	$ 4.44	$ 4.33	$ 4.28	$ 5.29	$ 6.23	$ 7.75	$ 8.68	$ 8.26	$ 6.00
Income per hen from hatching eggs	$ 6.22	$ 7.06	$ 4.87	$ 7.38	$ 8.28	$ 12.21	$ 16.02	$ 17.93	$ 8.69	$ 9.85
Management income per hen	1.46	2.62	.54	3.10	2.99	5.98	8.27	9.25	.43	3.85
Farm income per hen†	2.19	3.17	1.09	3.96	3.76	7.20	10.20	11.48	1.96	5.00

* Net stock cost is starting value of hens and toms less salvage value at end of the season.

† Farm income per hen is the amount by which total income exceeds cash costs and depreciation and is management income plus the value of operator's labor and interest on investment.

hatching-egg area, but Riverside and San Diego counties are also areas of considerable production of early hatching-eggs.

Sell at the right time, through favorable outlets

Turkeys are sold live by the majority of commercial producers. They are sold to local buyers at the ranch, or shipped on consignment to more distant markets, or delivered to a coöperative association which dresses and markets them. Finding a market is usually not a problem, but the choice of agency and time of selling may greatly influence the price received. The producer must consider many factors, such as the weights of his birds, the seasonal price trend, and the relative prices in various alternative markets. Local sale of dressed birds is not an important outlet for large commercial producers, although some favorably located producers retail most of their birds at roadside stands.

The business should be of adequate size

It is important for the turkey producer to have a size of business that meets his income needs and fits his available labor, farm area, and facilities. An average net farm income over the years of about a dollar a bird is a reasonable expectation, so to average between $2,700 and $3,000 net income a year will require 2,700 to 3,000 turkeys raised and sold. With average success, raising 80 per cent of the poults started would mean beginning with about 3,600 poults, as shown in table 4. Considering a half hour of labor per bird raised, the 1,440 hours required would mean about 6 hours a day for 8 months.

There may be some advantage in raising turkeys in connection with some other farm enterprise, such as a small dairy or crop farm but *never chickens.* More than one source of income improves the chance of making some profit each year. Full year-around employment usually results in a larger income in farming as in other activities.

Consider a combination of meat and eggs

A hatching-egg enterprise is practically always associated with a turkey-raising enterprise, at least to the extent that enough turkeys are raised to furnish the desired number of breeding hens after culling or selection and testing for pullorum disease. On the basis of averages shown in table 3, one might conclude that a net farm income of $3.00 a hen should be a reasonable expectation with good management, in a good hatching-egg district.

An enterprise of 500 breeding hens would provide employment of about 1,000 hours (about 6 hours a day for a period of 6 months) and a possible net income of $1,500. This enterprise would need to be combined with the raising of at least 1,500 turkeys to provide the 500 breeding hens. It could be combined with as many as 2,500 since there is only an overlap of two months or so in the spring after poults are obtained and before the breeding birds are sold. Such a combination would provide year-around employment and a better income than either enterprise alone. Such a combination however requires greater care in sanitation, and disease prevention, and sufficient space to avoid contact between poults and hens. It should only be undertaken in a suitable location and after successful experience in raising meat turkeys.

Some turkey raisers not in a hatching-egg district may wish to produce hatching-eggs to furnish their own poults. They will be handicapped by either a long hatching period with several overlapping broods or a short, uneconomical breeding season. It might be feasible to compromise on about a three-month breeding period with 40 hatching-eggs pro-

duced per hen, from which about 25 poults should be obtainable. Hence, the raising of 3,600 poults would involve keeping 150 breeding hens and 21 toms, assuming that the operator keeps one tom per 7 hens.

It is helpful to provide green feed supplies

Turkeys benefit from green feed. Cut-green feed up to 20 per cent of the weight of grain and mash used is desirable and will reduce the quantity of grain and mash required. This green feed may be obtained by pasturing the birds, but the raising and cutting of green feed are to be preferred. About 20 pounds of cut greens per bird raised for the entire period of eight months would mean about 28 tons for 2,880 birds raised. This would require around 2 to 3 acres of irrigated alfalfa or Ladino clover. Where the birds are run on irrigated pasture, an acre to each 500 birds raised has been suggested by some successful growers. Where natural spring range is available, from 1 to 3 acres will provide natural green feed for 1,000 young turkeys until the grass dries up. After this, greens must be provided from some other source, or substitutes provided in the mash.

A breeding flock in the winter and spring months can well use up to 27 pounds of green feed per breeding hen. Some of this can come from a clover field or pasture, but in the winter special green feed crops or alfalfa hay or meal will be used. A turkey farm with 2,800 turkeys or 1,500 turkeys and 500 breeding hens could well use 2 to 3 acres of green-feed land, systematically watered and cut, or around 5 to 6 acres of irrigated pasture or range. One year should elapse before a permanent, irrigated pasture used by hens is used by young turkeys. Turkeys are, however, successfully grown without green feed by having a suitable percentage of good quality alfalfa meal in the mash.

Growing turkeys need plenty of elbow room

Where turkeys are raised in confinement in dry yards, they should have at least 50 square feet per bird or about an acre for each 800 birds raised, or better yet 2 acres, so land use may be alternated. Hence, a flock of 2,800 would call for a minimum of about 3.5 acres for rearing space, to which would be added a half acre for brooder house, feed houses, driveways, etc., and perhaps 2 to 3 acres for green-feed land, and a half acre for the operator's dwelling and garden—a total of about 7 acres. If irrigated pasture is used, the rearing space of 6 acres would include green feed production. If hatching-eggs are also produced, additional space for isolation and rotation of land use and growth in size of business should be provided. Ten acres of land is probably a minimum for a commercial turkey farm. This does not need to be of high quality but should always be well drained and never subject to floods. It would need to be of suitable quality for green feed production or irrigated pasture if these are grown.

Buildings. Turkeys are started in brooder houses, and poults require about twice the space per bird that baby chicks need. The University type brooder house with a pen $14' \times 20'$ and a 1,000-chick hover has room for 300 poults per pen. (California Agricultural Experiment Station Bulletin 476, "Poultry Houses and Equipment.") Two broods can use the same facilities, one in March and one in May. Hence, starting 3,600 poults would require about six brooder pens and hovers. After the first eight weeks birds are out in the open and need only portable feeders, water troughs, shade, and roosts in the yards or pasture where they are confined.

Shade, either natural or artificial is necessary during hot weather. This is particularly true in the central valley counties where high temperatures prevail.

TABLE 4. Sample Inputs and Costs in Turkey Production

Based on raising 80 per cent of the poults to an average weight of 20 pounds

	Quantity				Price	Total cost 2,880 birds	Cost per bird	Cost per pound
	Unit	2,880 birds	Per bird	Per pound				
Mash	pounds	144,000	50	2.5	$ 4.50	$ 6,480	$ 2.24	11.2c
Grain	pounds	144,000	50	2.5	3.00	4,320	1.50	7.5
Grit and minerals	pounds	14,400	5	.3	2.00	288	.10	.5
Green feed, fresh at growing cost	pounds	57,600	20	1.1	.50	288	.10	.5
Total feed cost	.....	.....	....	....	....	$ 11,376	$ 3.94	19.7c
Poults	number	3,600	1.25	....	.70	2,520	.88	4.4
Labor	hours	1,440	.5	....	.90	1,296	.45	2.3
Electricity or gas for brooding	.....	.....	....	....	....	144	.05	.2
Miscellaneous, general expense, taxes	.....	.....	....	....	....	432	.15	.8
Depreciation, buildings and equipment	.....	.....	....	....	....	230	.08	.4
Interest on investment at 5%	.....	.....	....	....	....	288	.10	.5
Total expense	.....	.....	....	....	....	$ 16,286	$ 5.65	28.3c

Here are some sample inputs and costs

It is well to plan turkey operations in advance each year. This enables a producer to foresee and provide for his feed and operating capital requirements. In raising turkeys there is practically no income until the birds are marketed at maturity. Table 4 presents a sample calculation in which quantities required are figured at assumed prices. This is not a forecast of production costs for any future time but may be used as a guide in figuring probable costs for the season ahead at estimated prices for feed and other items. The figures are based on raising 80 per cent of 3,600 poults to an average weight of 20 pounds for the hens and toms. The efficiency of production and feed requirement assumed in this calculation are those shown by recent turkey records summarized by the Agricultural Extension Service and shown in table 2, on page 5.

It takes capital to get started in business

The fixed investment required in turkey production is relatively low as compared to other types of farming, but the operating capital required to buy poults and raise them to market age is high. It is possible to operate with low cost, portable colony brooder houses and with movable equipment on rented land. For saving of labor and connection to utilities, however, permanent brooder houses are desirable. Adequate convenient labor-saving facilities not only enable the raising of more birds with the same amount of labor but also pay in better results with a higher percentage of birds raised. Recent records show an investment of about 60 cents per bird raised for buildings and 35 cents for equipment, but this was largely for old equipment obtained years ago at lower prices. Investment in good permanent facilities now (1950) would probably run from 5 to 50 cents per bird for land, from $1.50 to $2.50 for buildings, and around 50 cents for brooders, roosts, hoppers, and other equipment—probably a total of $3.00 per bird raised. For the 2,800-bird enterprise this would mean about $9,000 for land and turkey facilities aside from the operator's dwelling. The operating capital required to bring the birds through to maturity will vary with poult prices and feed costs. Table 4 shows a total cost of $5.65 per bird. This would mean an additional capital outlay of $16,000 for the raising of 2,800 turkeys, or about $25,000 in all.

Credit. Despite the risky nature of turkey growing, credit is usually available to finance partially the growing of turkeys. The experienced grower of good reputation who has the facilities, either owned or rented, and enough operating capital to buy his poults and raise them to a certain stage can usually borrow from banks or production credit associations to complete the job—perhaps up to 60 per cent of the expected final value of the birds. Such credit on a commercial basis and at a nominal cost is advantageous in that it enables the grower to have a large business on limited capital and still leaves him free to buy his feed and market his birds to his best advantage. If a greater degree of financing is sought, the grower must expect it to be high in cost and to result in loss of choice in feed purchases and marketing of the birds. He may find himself working for his creditor with no guarantee of wages and only a share of the profits, if any, after the advances and charges of the creditor are met.

And here is a summary of the success factors

The small margin of profit in meat-turkey production requires correct decisions at every step in the process. Finances must be adequate. The poults must be good and from pullorum-free

flocks. Heavy disease and other losses must be prevented in order to raise a sufficiently high percentage of the poults. Feed must be of the right kind and purchased wisely in the most economical forms and from the lowest-priced source. The turkeys must be brought to the right degree of finish at the right time and marketed advantageously. Experience and technical training on the part of the operator would be advantageous but are not indispensable. A willingness to learn and to seek correct technical information is important.

The Agricultural Extension Service of the University of California College of Agriculture and the United States Department of Agriculture maintains local offices in the agricultural counties of California. Here may be obtained free technical information and advice, and free publications on turkey production. Anyone interested in such service may consult his local Farm Advisor.

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